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[For information on the topography, climate, agriculture and commercial crops, irrigation, stock raising, natural resources, production and supply, waterways, railways, and roads of the valleys of the Tigris and Euphrates between the plateau of Asia Minor and the Persian Gulf, discussed as one geographical unit, rather than by political boundary, see, M1 Middle East, cat. 116, 21: Fisher, pp. 340-370.]

[For information on the topography, climate, agriculture, mineral wealth, railways, settlement pattern, productive capacity of the economy, and trade of the Levant coastland, see M1 Middle East, cat. 116, 21: Fisher, pp. 371-414.]

[For information on the topography, occupations and relative productivity of the desert plateau, and of the Arabian Peninsula as a whole, see M1 Middle East, cat. 116, 21:Fisher, pp. 427-449.]

407 installments some 200 tractors of which the share for Jazirah was 71.
439 This brings the number of tractors and combines to about 400 and 300,
654 respectively.
452 It appears that the present number of tractors and combines fulfills the demands of the Jazirah if no new region such as the Rad is
407 opened for cultivation. This is demonstrated by the fall in the rent
427 of agricultural machinery, for whereas rent of the combine cost 33% of the crop in 1936 and between 22-25% from 1940 to 1948, the charge dropped to less than 20% in 1949 and 1950 and to 15% in 1952. This last share leaves a moderate and reasonable profit to the combine owner and it will not be possible for him to reduce prices greatly.

The same is true of tractor rents. The average charge for disc plowing a dunum at present is LS . 90-1. 10 in the region of Qamishli. This is a competitive charge and cannot be much reduced.

Therefore, the conclusionis that the number of agricultural machines in Jazirah is likely to remain stable with importation every year to replace those machines which become obsolete.

b. Expansion in the Area Cultivated

311 The first regions to be tilled by tractors in Jazirah were Qamishli Amuda and Dirbasiya. When no more lands were available around them farmers after 1946 went east to Tal Koshak on the border of Iraq.

After 1949 all the region from Tal Koshak to Dirbasiya became cultivated and farmers had to move to less productive areas around the Rad, south of Tel Brak, and in Ras el Ain. At present time, taking Tal Koshak on the east and 30 kilometers [illegible] of Dirbasiya as the western boundary and south to the Rad and to Hassakeh, there is not a single patch uncultivated on a two year basis. In the first two years the region between Ras el Ain and Rakka was opened for cultivation by Asfar and Hajjar family. This year the first crop grown on lands midway between the two towns appeared. The yield of barley was 5 to 6 times the amount planted. Around Qamishli the barley yield was 10 to 12.

311 The region of Deirik and Ain Divar or Jaziratibn Amr was long
491 neglected despite its fertility because of impossible communications. No roads existed and the abundant rainfall stopped all transport for six months of the year. Within the last two years the Government

has started the construction of a road which is not yet finished, but which permits trucks to reach Deirik in all seasons. Farmers flowed into the region following the opening of the road and began populating it. The present Minister of National Economy, Munir Diab, and Mr. Amin Nazif, formerly Secretary General of the Ministry of agriculture, own lands in the region.

c. Volume of Seeds and Crops

The main dry farming crop in Jazirah is wheat with "black" barley a poor second. It is estimated that about 50-60,000 tons of wheat are planted every year and some five thousand tons of barley. The average yield of wheat is 6-7 times per unit planted which gives a yearly crop of some 350-400,000 tons, of this quantity, 85-100,000 tons are needed for local consumption and for seed. This leaves about 250-300,000 tons available for export in an average year. Calculating this quantity at the price of LS 170 in the field free of all expenses, it means a revenue of LS 51 million per year to Jazirah with seeds and provisions already accounted for or about LS 250 per capita.

d. Difficulties in the Way of Agricultural Development

Agriculture in Jazirah suffers from many obstacles and hindrances which the Government can remedy with some careful thought and planning. The difficulties connected with land ownership and tenure and with credit and transport will be discussed separately, but other obstacles will be mentioned here below:

1. There is no agricultural station in the important wheat growing centers of Jazirah to record the amount of rainfall and the mean temperatures to guide the farmers.

2. The Jazirah is subject in most years to a heat wave during the month of May which destroys 25-35% of the crop. The only remedy is to introduce strains of wheat which mature before the period of the heat wave. Although the problem and the remedy are known to the Government, no effort has yet been made either to import new

a. The Region of Deirik

In the region of Deirik, the Zarkan river and numerous springs in the villages make irrigation possible over vast areas. The region began to be developed recently when the road was partly constructed. Rice is an old staple, but in the last two years it have given place to cotton. However, rice may resume its former place since cotton diseases have become so widespread.

b. The Jarrah

The Jarrah river flows through Kubur el Bid and irrigates the country around it. Its waters were used for rice plantations, and recently for cotton. In winter its waters flow into the Rad.

c. The Jagjag

The main river of northern Jazirah is the Jagjag. Its sources are about thirty kilometers north of Kamishli, in a gorge in Turkey. It flows through Nisibin and Kamishli, crosses the Jazirah plain and empties in the Khabur at Hassakeh. Its total length is about 100 kms. and its average flow is 3 cubic meters per second.

In Turkey and Kamishli, the river has several beds. The Turks, unable to exploit it fully in their country because of its short flow there, follow the practice of changing the river from bed to bed in the summer months, so that farmers in Jazirah do not know when the water will be available to them. This uncertainty has lead the villages which have a right to the water to sell their rights for one or more years to individuals on good terms with the Turkish authorities. These individuals in their turn bribe the Turks to direct the waters in the bed which leads to their lands. One family in particular has obtained a sort of monopoly on the waters of the Jagjag in Qamishli. The Asfar-Najjars buy the water rights from the villages for nominal sums and then try to reach an understanding with the Turks. Since they have one or two competing groups in Qamishli, the Turks usually get paid by both parties and satisfy none entirely. The Asfars manage however to get the biggest share.

Such an unstable situation does not lead to steady irrigation development along the lines of orchard planting. The farmer is lucky if he can grow one crop of rice or cotton with the present

452 plantation and the value of his lands. Lands without title have no commercial value though the farmer may use them without opposition. This is apparent at the present time when lands with title and undisputed boundaries sell at ten times the price of occupied lands without title A survey and cadastration of Jazirah lands with a rapid and form settlement of boundary disputed and the grant of property deeds will expand the borrowing capacities of Jazirah enonously and may tend to reduce the exorbitant rates of interest demanded by the money lenders. On such a trable basis, other banking establishments may be induced to open business in the region and relieve its dependance on the greedy money lender.

COMMUNICATION AND TRANSPORTATION

491 During the French Mandate there was not a single paved or as-
496 phalted road in Jazirah. In winter road communications were out between the different towns and villages and the only means of travel was by train which passed through the more important centers of Qamishli, Amuda and Dirbassiya For the rest of the year road transport became possible but expensive because of the absence of roads For this reason, the whole region of Deirik remained undeveloped until quite recently.

I. Roads Within Jazirah

491 The independent Government in Syria started building a
653 road in 1945 between Qamishli and Hassakeh which served at the same time as the arterial road to Aleppo. Though the distance between the two towns is only 85 kilometers, the funds alloted yearly for the road were so small that now, after seven years, only about 30 kilometers are asphalted and the rest is paved The maintenance does not keep up with the deterioration and the road is going to pieces. However, now at last, communication is assured in all weather while before trucks were stuck for days during the rainy season.

Another asphalted road joins Qamishli with Amuda, a distance of 30 kilometers. Here again deterioration is rapid. This road is to be projected another 30 kilometers to Dirbassiya and from there to Ras el Ain, a distance of 60 kilometers.

491 The road Qamishli-Hassakeh is extended for 50 kilometers south to Point 47 on the way to Deir Ezzor. This section is also asphalted.

491 It used to be one of the worst roads in Jazirah. At the end of this stretch begins the desert of Deir Ezzor 100 kilometers wide. Some sections of it where rainwater prevents the passage of cars are paved. Nevertheless, the road closes during several weeks in winter.

Another road built crudely by the British Army stretches from Qamishli to Kubur el Bid-Talkoshak-Mosul. It is paved with rough stones and it is only used by cars in winter. Beyond Tel Abu a road branches to Deirik and Ain Diwar.

[487] Aside from these, all Jazirah roads are tracks. There are no roads between Amuda, Derbassiya and Hassakeh, nor between Ras el Ain and Hassekeh, nor between the more important villages clustering around the several towns.

The absence of bridges across the Jagjag renders communication more difficult especially in winter when the waters of the river rise. There is a bridge at Qamishli, another one at Tal Brak 40 kilometers south and a third one at Hassakeh. In the relatively crowded villages near Qamishli along both sides of the river, crossings are effected with great hardship by loaded trucks especially in winter.

II Roads Between Jazirah and Aleppo

361 Aleppo is the nearest commercial center to Jazirah. It is
438 the market for Jazirah grains, wool, samneh and hides. It provides
491 Jazirah with all its needs of cement, textiles and all kinds of imported goods. That is why daily communication between the two regions is vital to Jazirah, but the Government has not judged it yet necessary to construct an all-weather road. Such a road exists in
491 more or less good shape from Qamishli to Hassakeh and to Point 47. From there on, the road to Rakka is closed all during the winter months and travel to Deir Ezzor is interrupted whenever there is heavy rain. The northern and shorter road Qamishli-Ras el Ain-Rakka-Aleppo is also closed in winter for goods and passengers. The shortest road and that which passes through the best developed areas is the one which follows the railway line Qamishli-Amuda-Dirbassiya-Ras el Ain-Tal Abiad-Jarablus-Aleppo. It is 420 kilometers long as contrasted with 465 kilometers for Qamishli-Ras el Ain-Rakka-Aleppo, and 485 kilometers for Qamishli-Hassakeh-Rakka-Aleppo and 565 for Qamishli-Hassakeh-Deir Ezzor-Aleppo which is the usual route followed in winter.

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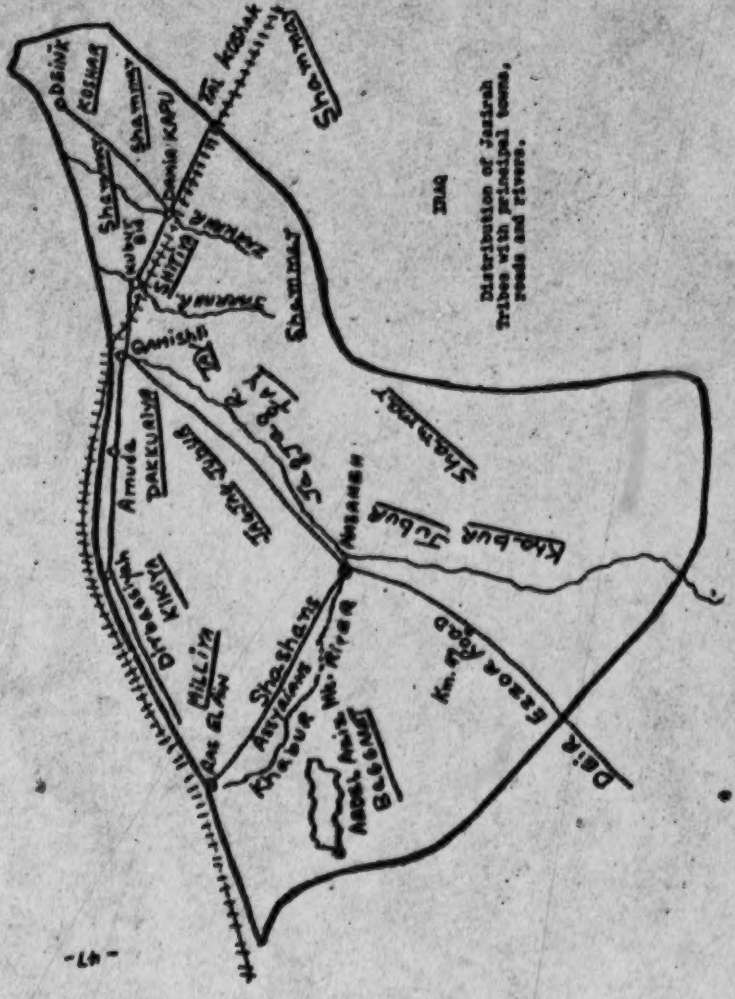
Distribution of Jazirah tribes with principal towns, roads and rivers.
Iraq
Shammar
Shammar
Shammar
Shammar
Amarat
Dabbak
Kobbas
Shammar
Shammar
Shammar
Shammar

mainly by motor-car. The trunk-roads, built for the most part since the establishment of French rule, are good, local roads satisfactory in summer but often very bad in winter; motor transport across the desert to Iraq is well organized by private companies. A trans-desert railway has been planned but not built. There are several civil airports.

The defective financial system is a further obstacle to economic development. Credit facilities are inadequate; foreign capital has been invested in public utilities but not in industry; long-term investment and constructive enterprise have been discouraged by the instability of the currency. Since 1924 the legal currency of the country has been the Syro-Lebanese paper pound, issued by the concessionary Banque de Syrie et du Grand Liban, of which the ownership is mainly French. It is a franc-exchange currency, one pound being equivalent to twenty francs; and it therefore shared in the fluctuations of the franc. In 1941, after the invasion of Syria and Lebanon by the Allied forces, it was officially linked to sterling. As an unstable and a paper currency, it has never won the confidence of the bulk of the population, who prefer, in spite of official prohibitions, to use the Ottoman gold pound or the sovereign as the standard of value in important transactions; since the relation between the value of the gold pound and that of the paper pound is constantly changing, problems are always arising in regard to the rate of repayment of debts calculated in terms of gold but actually paid in paper.

4

In commerce as in industry the old order is dying. So long as Syria and Lebanon formed part of the Ottoman Empire, their towns were centres not only for the internal trade of a great part of Ottoman Asia but also for much of its trade with Europe. The last generation has seen the disintegration of the Empire into a number of separate States and the creation of tariff-barriers and other obstacles to the free flow of goods; it has witnessed also the rise of the port of Haifa, and the consequent diversion of part of the transit-trade from Syria and Lebanon to Palestine. In addition, the decline of the traditional industries and the decrease in the demand for their products, the slow growth of modern industries and the absence of any considerable demand in the world for

courts', of which the personnel was partly French and only partly indigenous; this system replaced that of the 'capitulations' which had existed in the Ottoman Empire and of which the operation was suspended so long as the Mandate should continue.

8

The declarations of Syrian and Lebanese independence in 1941 have been gradually followed by a partial extension of self-government. Although the Mandate has not yet been formally extinguished, strict Mandatory control no longer exists. During the years from 1918 to 1941, during which France exercised this control, her efforts were attended with some success, but in general met with failure.

Briefly stated, the achievement of France was to bring into existence in Syria and Lebanon some of the essential conditions which would make possible the transition from a medieval to a modern society. Law and order were firmly established, even in backward regions where civil government existed scarcely or not at all in Turkish days. The improvements which were effected in the system of communications assisted this process. Good trunk-roads now link the main towns, and subsidiary roads have opened up the countryside to motor-traffic. These and other improvements have served not only to increase the efficiency of government but also to diminish local differences and prejudices.

The system of public finance was reduced to some sort of order. It was placed on a comparatively reasonable basis, although there are still serious flaws, as for example the regressive incidence of taxation. On the whole budgets balanced; and after the share of the French Mandated Territories in the Ottoman Debt was paid off in 1933 they had no public debt at all.

The improvements in public order and administration made possible an extension in the area of cultivation. The nomads were no longer allowed to raid the settled land, and were being gradually induced to become peasants. Some of the areas which they formerly dominated were thus opened up to agriculture; this was especially marked in the Syrian Jazirah.

For the first time for many centuries, the religious minorities were treated on a level of full equality with the Sunni Moslems in all official matters, judicial and administrative alike. (Some

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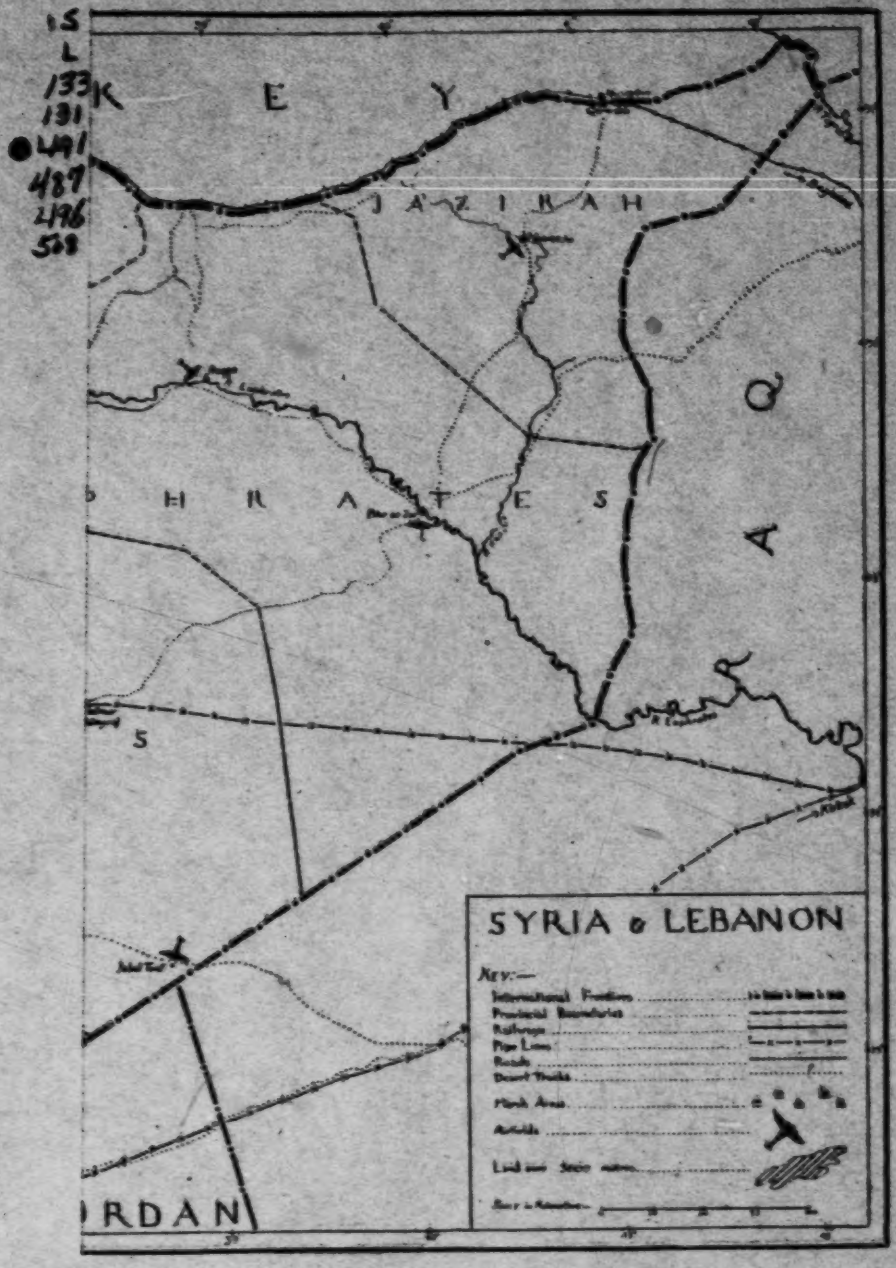
T U R K E Y
S Y R I A
I R A Q
A R A B I A
PALESTINE
TRANSJORDAN
HAMAD
Aleppo
Homs
Tripoli
Damascus
Amman
Palmyra
Deir ez Zor
Mosul
SYRIA: the Campaign of 1941 8th June — 15th July
SCALE:— Km.
Roads & Tracks
Main Railways

T U R K
ALEPPO
E U P H
HAMA
LATAKIA
H O M S
D A M A S C U S
SEBEL DRUZE
TRANSJORDA

Ello map (A)



END MAP (B)

14:International Bank S-5 (1954) 1955 MD1 Syria MD1

457 Proper maintenance and repair of monuments is perhaps even more urgent,
658 since there is considerable deterioration at present. We accordingly recom-
172 mend that expenditures for this purpose be raised, on the average, approxi-
mately 50% over the next six years. A similar increase might be contem-
plated for excavation work which, as in the past, will presumably be
carried out in cooperation with foreign archaeological missions. All this
will require an increase in the subsidies paid to the Directorate of Antiqui-
ties out of the government budget to an average annual amount of approxi-
mately £S 950,000. The gradual growth in the Directorate's own receipts
will probably suffice to cover necessary increases in administrative outlays.

[491] Poor roads now impede access to many interesting historical monu-
ments. In addition to the recommendations on the national road network
made elsewhere, we believe Syria would be well advised to spend about
£S 1.5 million on the improvement of local roads of importance to the
tourist trade. The access roads to the Krak des Chevaliers and Saint Simeon
should have the highest priority.

457 Within the not too distant future the government should contemplate
the establishment of a special office charged with the promotion of tourism.
The cooperation and financial support of business groups interested in the
tourist trade might well be enlisted. It should not only seek to interest the
foreign tourist in the attractions of Syria, but also to make the Syrian
people and Syrian officials more aware of the importance of the tourist
trade and of making the tourist genuinely welcome.

Government Expenditures on Industry

433
664 Although industry is preeminently a field for private enterprise, we
have made in this chapter a number of recommendations entailing addi-
tional government expenditures. For the period 1955-60 these would total
about £S 20.5 million, allocated as follows (in thousands of Syrian
pounds):

	Total	Average annual
Manufacturing		
Investment bank	10,500	1,750
Industrial zones and workshops	1,800	300
Enforcement of labor code[a]	325	54

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omy. True, Jordanians have frequently complained of Syrian government regulations which, in an effort to support the Hedjaz Railway, have prohibited transit traffic by truck of most goods. While some categories of goods, notably perishables and petroleum products, are exempt from this prohibition, there is little doubt that more traffic would move by road if the prohibition were entirely lifted. At the same time, Jordan may be able to import and export some bulky commodities more advantageously by rail; Jordan's own port an the Gulf of Akaba has no rail connection and is by no means as advantageously situated with respect to trade with Europe as Beirut. In the circumstances, we would suggest that the subject of transit and the relationship of the rail lines thereto be fully and frankly discussed by representatives of the Jordanian, Syrian and Lebanese governments. Their common interest in the maintenance of the railway lines and the possibilities of more efficient and economical operation can then be thoroughly examined. It may be feasible to reduce operating costs by agreed economies and to raise revenues through certain selective increases in freight rates. In some respects, for instance, freight rates on the Hedjaz Railway seem to be lower than those on the DHP line. In the long run it appears unwise to make shippers support the railway by insisting that they use it for transport of certain commodities. If the railway must be maintained owing to considerations which are partly non-economic, it would be better to have the governments concerned share the entire deficit resulting from its continued operation.

Road Transport[28]

With traffic on the railways no greater than prewar, it is apparent that motor transport has captured all of the substantial increase in the amount of goods produced and traded in the Syrian economy over the last decade and a half. The Syrian road network increased from 4,500 kilometers in 1939 to 8,200 in 1952, and the length of hard-surface (macadam and asphalt) from 1,500 to 3,800 kilometers. This includes only so-called "all-weather" roads; with the addition of those not traversable in the wet season the total length is over 10,000 kilometers. The number of motor vehicles of all kinds on the roads rose from 3,736 in 1939 to 13,146 in 1953; the number of trucks increased from 873 to 4,742 and of buses from 348 to 1,212. In part the rapid growth of road transport was caused by the lack of adequate

[28] See Annex H, p. 436.

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The First Priority: Latakia-Aleppo-Jezireh

The most urgent transport problem centers around the improvement of communications between Latakia and Aleppo and the Jezireh. The rapid development of northern and particularly northeastern Syria has made the east-west communication lines across this part of the country by far the most important arteries for the movement of bulk commodities. The Jezireh produces most of Syria's wheat export surplus, and the Jezireh, the Euphrates valley, and the Aleppo-Hama-Homs region contribute together nearly all of the country's barley exports. The same areas produce virtually all Syria's cotton, which has attained considerable volume over the last four years. Finally, northern Syria is to some extent, and can become even more, a transit zone between the Mediterranean and Iraq.

Some indication of the importance of the communications lines across northern Syria is given by the volume of goods handled in Latakia. Export traffic through this port rose from 13,700 tons in 1947 to 353,396 tons in 1953; in 1954 it was 630,720 tons. Of the 1953 tonnage, 62% consisted of wheat and barley and 21% of cotton, cottonseeds and cotton meal. The volume of imports has also grown rapidly—from 5,200 tons in 1947 to 176,364 tons in 1953 and to 208,343 tons in 1954.

From the east, principally the Jezireh, the volume of transport is even greater, approximating probably 500,000 tons annually in recent years. In the reverse direction, however, freight movement is much more modest—apparently less than 50,000 tons.

Transport conditions over these vital arteries are far from satisfactory. Latakia and Aleppo are linked by a metalled road over the Alaouit mountains which is much too narrow for the rapidly increasing truck traffic and is occasionally blocked by landslides. The road surface is not adapted to heavy truck traffic and is poorly maintained in many sections. From Aleppo an asphalt road runs eastward to Raqqa on the Euphrates river and continues down the river valley to Deir ez Zor, where it turns into a track leading to Abou Kemal on the Iraqi frontier. From Deir ez Zor there is a road north to Kamichliye via Hassetche, but the surface is for the most part so bad that traffic moves along parallel tracks. The truck route from the Jezireh does not, however, go through Deir ez Zor, but runs more directly from Km. 47 on the Hassetche-Deir ez Zor road along a cross-country track to Raqqa. The feeders to these main routes are also tracks which become impassable during the rainy season.

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region, including the dry-farming area south of Ras el Ain and the irrigated area in the Khabour river valley. It would be advisable to start the construction of the Kamichliye-Ain Divar section first, because this rich agricultural region of heavy rainfall is now the most inaccessible part of the Jezireh. To feed the trunk highway the mission also recommends the construction of the following roads: (1) Ras el Ain-Hassetche, crossing the main highway at or near Tell Tamer (73 km); (2) Hassetche-Tloul Mohammed (60 km), thus linking the provincial capital with Kamichliye, the region's commercial center; (3) Derbassiye-main road (30 km); (4) Demir Kapu-Tell Kotchek (30 km); and (5) much farther to the west, Tell Abiad-Kantari (46 km). The first two are considered the more important. In general this proposed road network conforms to the most recently expressed views of the Syrian government, which has tentatively estimated the cost, pending engineering surveys, at about £S 46 million.

North-South Communications

We turn now to a consideration of the other principal transport routes. With respect to the north-south transport axis, improvement of communications between Aleppo and Damascus is most important. A direct standard-gauge railway link between these cities has often been proposed, either by the laying of an additional rail on the narrow-gauge line from Damascus to the junction with the standard-gauge line at Rayak in Lebanon or by the building of a new railway from Damascus to Homs, where it would connect with the DHP line to Aleppo. The mission is convinced, however, that the volume of bulk goods suitable for rail transport moving between Aleppo and Damascus is far too small to justify the large investment required, at least £S 18 million for the former and £S 36 million for the latter project. The solution is rather to improve and widen the Aleppo-Damascus road. The section between Hama and Aleppo urgently demands improvement, and the entire road should be widened by at least one meter to permit easier flow of two-way vehicular traffic. The cost of widening would probably be about £S 10,000 per kilometer or a total of about £S 4 million.

The transport route south from Damascus to Dera'a and the Jordanian frontier is served both by road and the Hedjaz Railway. The problems of the latter have already been discussed. The road, although not as well

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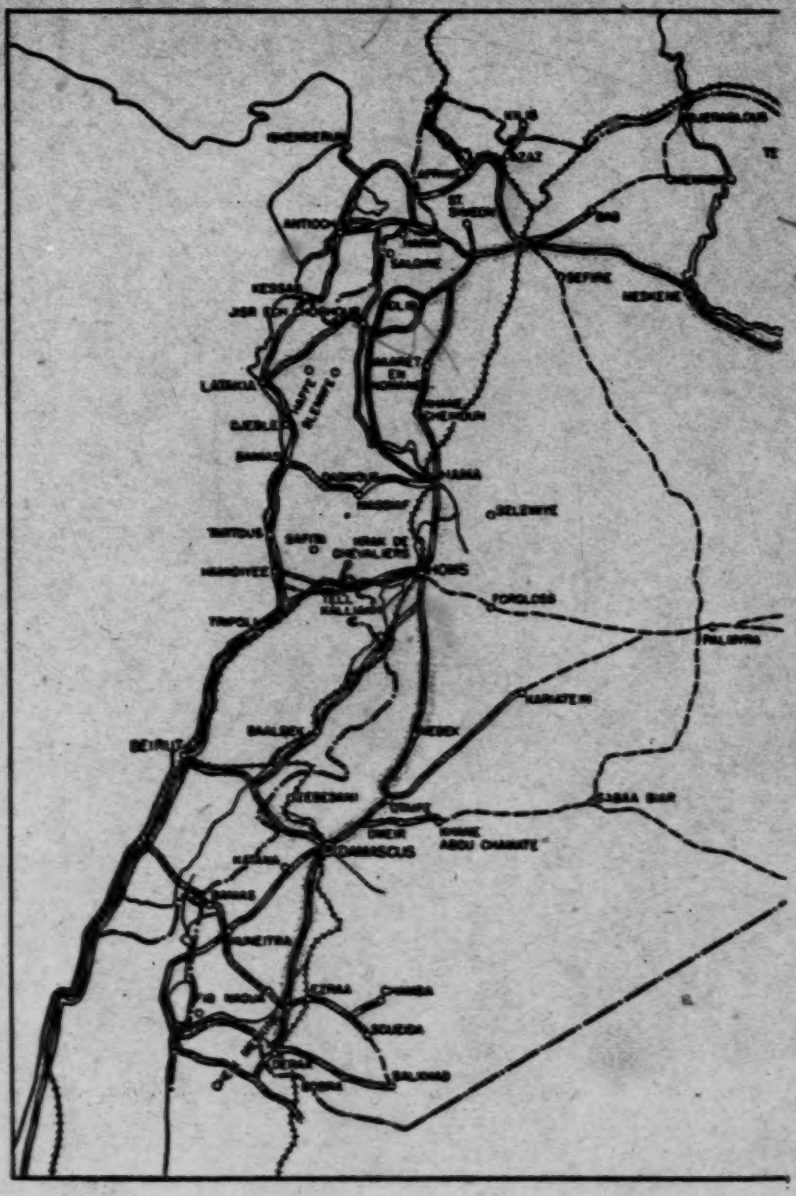

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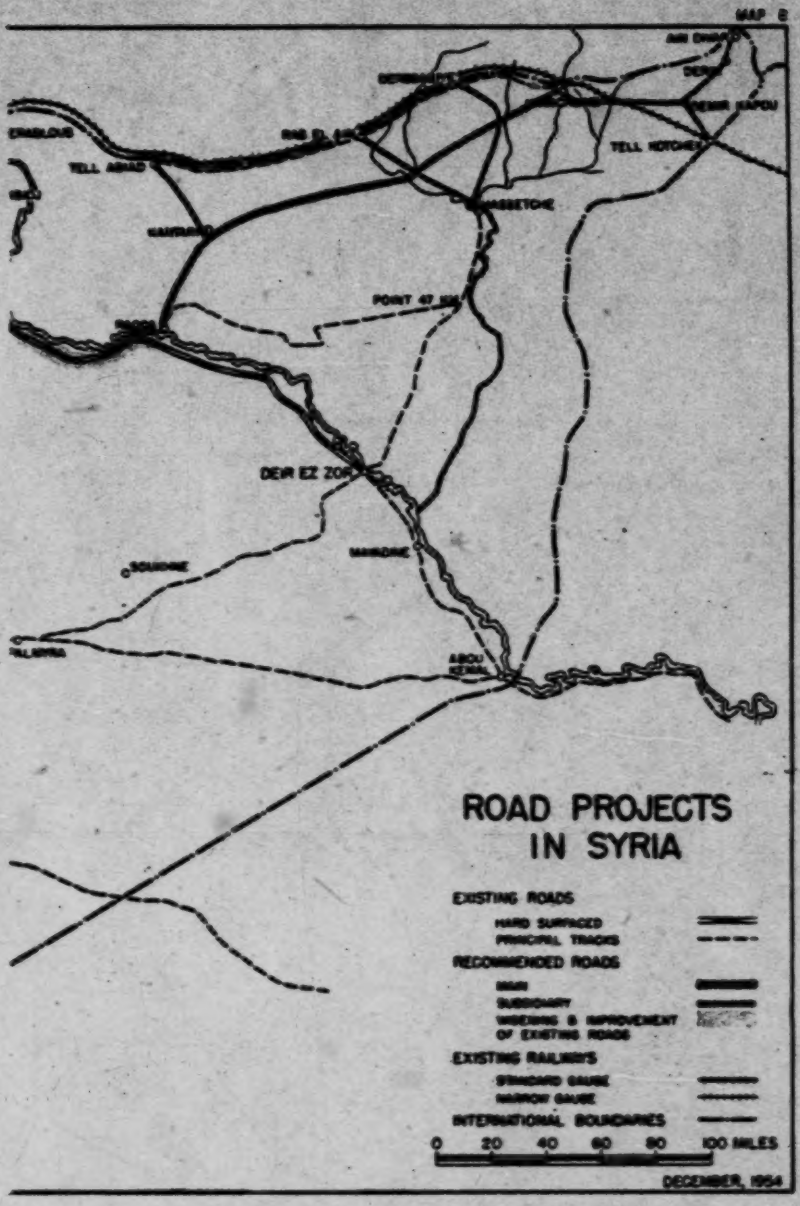

FOLLOWING P. 140 (B)

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travelled as the one to Aleppo, is still important for the transport of Syrian agricultural products and petroleum products destined for Jordan. The very bad section between Cheikh Meskine and Dera'a requires early attention, and the entire road should be widened by one meter after the completion of the Damascus-Aleppo road project. The mission estimates the total cost involved at £S 1.3 million.

Other Road Projects

Together with the Latakia-Aleppo-Jezireh road, the route between Damascus and Beirut is the most important to the Syrian economy. In fact the traffic on the Beirut-Damascus road is denser and steadier than that on the Latakia-Aleppo road. An urgent program to improve the surface of this road should be undertaken by the two countries concerned. For the improvement of the 35-kilometer section in Syrian territory, the mission anticipates that £S 1.05 million will need to be spent. It can be expected, however, that before many years more thorough-going measures will be necessary to accommodate the constantly growing traffic. To meet this longer-term need, proposals have been made to build a new road paralleling the old one and to construct a long tunnel at Hamana to bypass the most dangerous section across the Lebanon range, where traffic is often held up by fog and snow. The total cost has been estimated at £S 29 million, presumably to be shared by Syria and Lebanon. Parallel highways would certainly permit a great increase in traffic and would considerably reduce the prevailing high accident rate, by making possible the accommodation of slow-moving truck traffic and high-speed vehicular traffic on separate roads. Since the problem is not immediately urgent and the best solution remains to be worked out in detail, the mission considers it unnecessary to make specific proposals. It suggests, instead, that over the next five years the two governments jointly finance an engineering survey of the problem in order to prepare definite plans; an expenditure of £S 100,000 by each government should suffice.

The third most important transversal connection with the Mediterranean is that between Homs and Tripoli, served both by the DHP railway and by road. The road is of some importance, but several sections are in bad condition, particularly the 10-15 kilometer section just west of Homs and a shorter section passing through Lebanon before coming to Tell Kalakh. Improvement of this road, however, can probably be handled

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within the framework of the maintenance program proposed below. It is important that the Syrian and Lebanese governments come to an agreement on better maintenance of the section before Tell Kalakh.

Aside from the trunk highways discussed above, the mission has considered certain special road projects, including two which would provide better links between Homs and Hama on the one hand and the Syrian coast and Latakia on the other. Fundamental improvement of the road from Hama to Banias whence a road runs north to Latakia has sometimes been proposed. The mission believes a more economical solution would be to build a link between Hama and the main north-south road running through the Ghab for which provision has already been made in the Ghab project. The Ghab road would in turn connect with the Aleppo-Latakia highway. We have accordingly included £S 1.5 million for the building of this link in the program recommended for the next five or six years. Homs is now linked with the Syrian coast by a poor and rather circuitous road which branches off from the Homs-Tripoli highway at Tell Kalakh and passes through difficult terrain. It has been proposed, instead, to construct a shortcut between Akkari and Hamidiye which would connect with the coastal highway to Latakia and would cost about £S 1.8 million. In the mission's opinion, however, construction of this road is not very urgent, particularly since the Homs area is fairly well served by the port of Tripoli. The mission suggests, therefore, that it be built only toward the end of the program if funds are available.

Elsewhere the mission has pointed to the potential importance of the tourist trade. In order to stimulate this trade some of Syria's principal historical monuments such as the Krak des Chevaliers, the ruins of Saint Simeon, etc., should be made more accessible by road. The mission accordingly suggests that £S 1.5 million be allocated to construct such roads.

Road Maintenance[39]

The construction of new roads will be of little avail if they are allowed to deteriorate quickly. By and large maintenance has been poor in the past, although apparently not because of inadequate appropriations. Over the five-year period 1949-1953 an average of £S 3.3 million annually was allocated for maintenance; in 1954 £S 5.8 million was so allocated. The

[39] See Annex H, p. 439.

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latter amount, supplemented by increasing allowances for maintenance of the new roads recommended, should basically be adequate for the future as well. Poor organization, inadequate supervision and dispersal of effort seem to have been responsible for the past unsatisfactory results. Maintenance work is not the responsibility of the Director of Transport, but falls under that of the Secretary-General of the Ministry of Public Works, who is too preoccupied to give it adequate attention. Supervision in the field is inadequate, partly because of insufficient engineers and partly because engineers are reluctant to leave their desks. Maintenance crews are too small and their work is seldom concentrated in such a way as to effect visible improvement. This aspect of road work certainly demands the urgent attention of the Syrian government, which might well seek foreign technical advice on better organization of maintenance. We urge the establishment of a special highway department in the Ministry of Public Works to look after both maintenance and new construction.

Some increase in the availability of maintenance machinery appears desirable. The machinery park now includes 59 rollers, 62 boilers and 24 mixers, but no graders or bulldozers. Many of the rollers are old and some are defective and too light. The mission has accordingly allowed £S 1 million for new machinery in its recommended program.

Regulation of Road Traffic

Better regulation of road traffic is another requirement for the improvement of motor transport. A comprehensive road code exists, but there is virtually no policing to enforce it. Reckless driving is a common occurrence, and the accident rate appears to be excessive although no record is kept. Above all, chronic overloading of trucks wreaks havoc with road surfaces. As a minimum it is desirable to install a few weighing stations at key traffic centers to enforce loading regulations. Another cause for concern is the restrictive policy, originating with the French mandatory regime, which the government pursues in licensing common carrier trucks. Basically this policy provides that no new truck (other than tank trucks) will be licensed unless an old one is retired. Truck licenses, which are negotiable, therefore sell at a premium of £S 10,000 and more, and the number of commercial or common carrier trucks has tended to remain stationary while the number of private trucks has greatly increased. While the tendency toward even larger trucks has undoubtedly increased over-all

14:International Bank S-5 (1954) 1955 MD1 Syria MD1

program to a rail program as a solution of the Jezireh's transport problem. In the case of a railway all the investment funds would have to be furnished by the government, for private capital in such magnitude will simply not be available. On the other hand, private investment is and will be available for truck transport, so that government investment can be confined to road construction. In a country where it is difficult to transfer private savings to public hands this is an important consideration.

The mission has noted a report that a foreign firm would be willing to build a railway on the basis of payments spread over a period of 10 years following completion of construction. It should be pointed out, however, that the contraction of a foreign debt for this purpose might well impair Syria's capacity to borrow for other projects. The mission's proposed development program has already assumed a certain amount of external borrowing. Thus the contraction of foreign credits for railway construction is unlikely to provide Syria with more resources for financing a development program than we have envisaged.

It is sometimes argued that the operation of a railway would require fewer imports on a continuing basis than road transport, and that this would be advantageous for Syria's balance of payments and would also make transport less subject to interruption of foreign supplies in the event of war. There is no doubt that fewer imports would be required for rail transport. However, the savings in foreign exchange thus achieved would be smaller than the foreign exchange earned by the agricultural commodities that could be produced on land which could be irrigated if the additional capital required for a railway were devoted to irrigation projects. Moreover, the fact that a railway would be relatively less dependent on foreign supplies would be an advantage in time of war only if Syria itself were not involved in hostilities; if the war extended to Syrian territory, railway transport would be more susceptible to interruption by bombing than road transport.

II ROAD TRANSPORT

A ROAD SYSTEM AND TRAFFIC DEMANDS

Distribution of Syrian roads by use and type, in 1953, was as shown in Table 6.

The number of motor vehicles in the country has grown about 3½

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TABLE 6 Syrian All-Weather Roads, 1953

(Kilometers)

Type	Asphalted	Metalled	Earthen	Total
International and main highways	1,700	290	1,010	3,000
Others of economic importance	600	640	1,000	2,240
Local roads	300	270	2,390	2,960
Total	2,600	1,200	4,400	8,200

times since just before the war, and has nearly doubled since 1948 (see Table 7). Of special significance are trucks and buses, which not only have become more numerous but are constantly increasing in individual size and weight.

TABLE 7 Motor Vehicles in Circulation, 1937–53

Type	1937	1948	1951	1952	1953	1953 as % of 1937
Trucks	873	3,443	4,557	4,594	4,742	544
Buses	348	1,081	1,126	1,129	1,212	348
Passenger cars	2,515	3,101	5,444	6,065	7,192	285
Total	3,736	7,625	11,127	11,788	13,146	352

Of the 4,742 trucks registered in 1953, 158 were tankers and 623 were diesels. No statistics are available on sizes, but most of the newly imported ones are from 7 to 12 tons capacity. The aggregate capacity of trucks on the road is probably in excess of 33,000 tons. These figures do not indicate the true tonnage in circulation; a census during the month of August 1953 showed only about 30% of the 24,137 motor vehicles passing the frontier between Beirut and Damascus to be of Syrian registration.

Data of this kind, if carefully and systematically collected, can be a most useful guide in determining where road improvement funds should be invested for greatest public benefit. Only a few local traffic census figures were available to the mission, and while they appear to contain a number of serious discrepancies, they do indicate the order of magnitude

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This is one of the best-known types of "low cost" roads.[6] The success of the method depends largely upon the climate and the soil characteristics. A firm, sandy soil which does not require stabilization is best, for when a soil-stabilizing treatment must be applied the construction cost is no longer low. Costs are also affected by the necessity of hauling sand or stone long distances. Syrian conditions in general are less favorable to the method than might be expected, and in the extreme northeast are definitely unsuitable.

The mission has studied carefully the question of using low-cost road-building methods in certain parts of Syria. Apart from the factors mentioned, on the main routes it is evident that the traffic wear is too great even for the stone-based macadam with 15 cm. of block, 12 cm. of gravel and three cm. of asphalt pre-mix topping. It must be noted also that in popular usage "low-cost roads" mean low in construction cost only, not necessarily in expense of maintenance. The costs of material, labor, haulage, etc., add to the costs of maintenance as well as road-building. Where provision of adequate maintenance is difficult, it is often better to invest in a better road initially.

Mix-in-place or similar methods may hold promise in raising the standards of the desert roads or *pistes* (tracks). The mission did not find these in as bad a condition as so often reported; it appears that many instances of mired vehicles result from careless driving rather than from unavoidable road hazards. Nevertheless, some improvement of these routes must eventually be considered. At the moment it might best be confined to proper signposting, construction of Irish bridges, and repairs in the very worst places. In view of the limitation on development funds, road-building efforts just now should be focused mainly upon the several projects of greater urgency than these.

C ROAD MAINTENANCE

Close to the capital city, the roads appear to be rather well maintained; elsewhere the difference is at once noticeable. Toward the east many of the

[6] See: Landbouwwegen, Reports of a Congress of the Royal (Netherlands) Institute of Engineers, 1953; D. W. Lister, Bituminous Soil Stabilization for Road Foundations (Cairo), 1953; Low Cost Roads and Runways (Cairo), The Shell Company, 1947; Bituminous Products for Roads and Runways (supplement), The Shell Company, 1950; Stabilisation des Sols, Bulletin Intérieur Shell; Wet Sand Mix, Een voordelig procede voor de verharding van wegdekken enz. (Shell); etc.

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441 roads show evidence of neglect and some have been virtually ruined through lack of attention.

Expenditures

Financial provisions for road maintenance in the regular budget (shown in Table 8) during 1948-54 have averaged £S 3.23 million per year, or about as much as the average allowance for new road construction. During 1954 the original provision of £S 3.8 million was increased by a supplementary appropriation of £S 2 million, because of extraordinarily heavy rainfall damage, bringing the 1948-54 average to £S 3.51 million. On the basis of 8,200 kilometers of all-weather roads, this represents a maintenance allowance of £S 428 per kilometer.

TABLE 8 Budgetary Provisions for Syrian Roadbuilding and Maintenance in Recent Years

(Thousand £S)

Year	For new construction	For maintenance[a]
1948	7,216	2,300
1949	5,718	3,200
1950	2,907	3,200
1951	875	3,100
1952	1,752	3,400
1953	1,780	3,600
1954	3,478	5,300[b]

[a] Includes £S 300,000 each year for maintenance and depreciation of trucks, rollers and asphalting equipment.
[b] Includes a supplementary appropriation of £S 2 million during the year.

While this compares not unfavorably with that of some other countries[7] in similiar stages of development, only the increased 1954 figure approximates the needs of Syrian roads. The present 2,600 kilometers of asphalted road require, in addition to ordinary upkeep, a new three cm. covering of pre-mix every five years, at an estimated £S 10,000 per kilometer. Including this in a total maintenance estimate of £S 2,260 per kilometer per year

[7] Some comparative annual expenditures per kilometer for maintenance, expressed in Syrian currency, are: Iraq, £S 250–440; Egypt, £S 200–400; Surinam, £S 600; French West Africa, about £S 420.

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for the asphalted roads, and allowing £S 500 per kilometer for the macadamized routes and lesser amounts for others, the annual road maintenance budget should actually be around £S 6 million to £S 7 million.

This raises the question whether Syria should consider new road investment if existing ones cannot be properly maintained. For every kilometer of new construction the annual burden of upkeep increases. But current deficiencies in road maintenance are not simply a matter of money; the present annual expenditures are sufficient to keep the roads in far better condition than they are. The causes of neglect include several other factors.

Personnel

Some earlier studies[8] have referred to seasonal labor shortages in road maintenance. On this there are differences of opinion. In general, local authorities do not find difficulty on this score, although without question there are shortages of supervisory personnel in the middle rank and foreman grades. A more serious situation is evident at the engineering level, where a wider use of foreign consulting firms and contractors would be helpful. For the whole range of public works, including roads, the government has available about 50 qualified engineers. The detailed knowledge and skill of intensive specialization is difficult to achieve under these circumstances and the mission was therefore not surprised to observe occasional use of overheated asphalt, or of too chalky a sand in mending mixtures. The effectiveness of the small corps of engineers is further reduced by the inordinate burden of paper work and administrative detail, if not by an actual preference of many for office work at the expense of practical field supervision.

Organization

Road maintenance, as a responsibility of the Secretary-General of the Ministry of Public Works, must compete for attention with all other types of public work activities and often fares poorly. This organizational problem may be partially responsible for a certain maldistribution of maintenance funds among the various districts, which often leaves a number of

[8] E.g., Sir Alexander Gibb & Partners, *The Economic Development of Syria*, 1947.

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491 653 districts without the resources necessary for the most ordinary upkeep. A wider use of road gangs would achieve far better maintenance, for the same expenditure, than is possible with the prevailing "one-man" system. A team concentrating upon a section at a time can often effect repairs which one man alone cannot do at all; gangs also permit closer technical supervition and more efficient use of equipment—valuable considerations when the supply of both is limited.

Road Maintenance Equipment

491 406 The country as a whole has far too little road-building and maintenance machinery for effective work. Mechanization must of course be introduced gradually where so much of the work is now done by hand. The present stock of equipment cannot meet even current needs. Half the mixers in the Damascus area are unusable, for example. There are no graders or bulldozers for maintenance purposes, although at least ten are needed for the tracks alone.

It is not enough to expect that construction machinery will be assigned to maintenance afterward; much of it will be worn out on the contemplated road-building program. Maintenance machinery should be bought separately. For one or more stone-crushing plants, the necessary bulldozers and graders, new rollers and other equipment needed currently, the mission foresees an expenditure of £S 1 million in the first five-year period and twice this amount in the second five years.

D LEGISLATION ON THE USE OF ROADS

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Traffic Laws

Syria enacted a modern, comprehensive traffic code in 1953, which contains the usual detailed regulations on vehicle dimensions, maximum wheel loading, weight limits for certain types of roads and bridges, and similiar provisions for protection of the roads. It also provides for periodic inspection of vehicles for mechanical fitness. Rules of the road for safe and courteous driving are prescribed, as well as the knowledge required for obtaining a driver's permit.

The code is essentially a good one, and it is regrettable that most of its provisions are ineffective because of poor enforcement. Apart from the danger to human life, unless better measures are taken to enforce the

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شبكة الطرق في الجمهورية السورية
(الطول بالكيلومترات)

LENGTH OF ROADS IN THE SYRIAN REPUBLIC
(Length in kilometers)

Table No. 1

جدول رقم ١

Type of roads (1) and name of district	As at the end of				في نهاية السنة			نوع الطرق واسم المناطق (١)
	١٩٤٧ 1947	١٩٤٨ 1948	١٩٤٩ 1949	١٩٥٠ 1950	١٩٥١ 1951	١٩٥٢ 1952	١٩٥٣ 1953	
Asphalted Roads Total	**2,174**	**2,431**	**2,405**	**2,496**	**2,561**	**2,593**	**2,584**	**الطرق الزفتة المجموع**
Southern District	859	980	1,016	1,051	1,087	1,091	1,138	المنطقة الجنوبية
Northern « (2)	1,050	841	715	723	726	715	715	المنطقة الشمالية (١)
Western «	265	278	305	320	337	371	371	المنطقة الغربية
Eastern « (2)	—	332	369	402	411	416	360	المنطقة الشرقية (٢)
Metalled Roads Total	**1,014**	**1,037**	**1,196**	**1,155**	**1,151**	**1,163**	**1,262**	**الطرق المعبدة المجموع**
Southern District	414	476	590	570	552	576	616	المنطقة الجنوبية
Northern « (2)	480	285	290	306	317	353	353	المنطقة الشمالية (٢)
Western «	120	108	97	102	99	69	71	المنطقة الغربية
Eastern « (2)	—	188	179	175	183	165	222	المنطقة الشرقية (٢)
Subsidiary Roads Total	**3,362**	**4,349**	**5,873**	**6,386**	**6,415**	**6,511**	**6,182**	**الطرق التمهيدية المجموع**
Southern District	1,092	1,930	1,885	1,910	1,960	1,989	1,999	المنطقة الجنوبية
Northern « (2)	1,020	152	871	815	833	825	830	المنطقة الشمالية (٢)
Western «	1,250	1,360	1,360	1,388	1,394	1,450	1,150	المنطقة الغربية
Eastern « (2)	—	907	1,757	2,255	2,238	2,247	2,203	المنطقة الشرقية (٢)
Grand Total	**6,550**	**7,817**	**9,484**	**10,049**	**10,127**	**10,267**	**10,028**	**المجموع العام**

Sources : Ministry of Public Works

المصدر : وزارة الاشغال العامة

ملاحظة :

(١) تقسم وزارة الاشغال العامة البلاد الى ثلاث مناطق
(١) المنطقة الجنوبية — تشمل محافظات دمشق وحمص وحماة ودرعا والسويداء
(٢) المنطقة الشمالية — « « حلب والحسكة ودير الزور
(٣) المنطقة الغربية — « « محافظة اللاذقية

(٢) اعتبارا من اوائل سنة ١٩٤٨ جرى تغيير في المنطقة الشمالية فقط اذ سلخت منها محافظتي الحسكة ودير الزور وسميت المنطقة الشرقية

Note :

(1) The Ministry of Public Works devides the Country into the following districts :
1 - The Southern District – comprising the mohafazat of Damascus, Homs, Hama, Dir'a and Sweida.
2 - The Northern District — comprising the mohafazat of Aleppo, Al-Hasakeh, and Deir-es-Zor.
3 - The Western District — comprising the mohafaza of Latakia.

(2) As from the beginning of 1948, the mohafazat of Al-Hasakeh and Deir-es-Zor were excluded from the Northern District to make up the new Eastern District.

3:Royal Institute of International Affairs U-4 (no date)1954 M1 Middle East
Lebanon MEI
Syria MDI

into Jordan. There is a branch line from Deraa to Suwaida, but another branch, to Haifa, is out of use.

Damas-Hama et Prolongements. (*a*) From Beirut to Damascus there is a narrow-gauge track running for 91 miles via Rayaq; rack and pinion are used to traverse the mountains, and this slow haul is now employed for freight only. (*b*) From Rayaq to Aleppo there is a 4 ft 8 in. gauge track for 270 miles which passes through Homs and Hama. (*c*) The stretch of the Cairo–Turkey line from Ras an-Naqura on the Lebano–Israel border to Beirut is out of commission but the section of 64 miles in standard gauge from Beirut to Tripoli and Homs is used.

Syrian state Railways. This is the part (164 miles) of the Turkey–Mosul line that runs inside Syrian territory.

Roads

Main arterial roads in Lebanon are considered adequate, but the network of secondary and feeder roads is poor. In Syria the road system is generally inadequate, and only the asphalted roads are usable for heavy traffic throughout the year. The following figures give some indication of the position:

Syria, 1951		Lebanon, 1949	
	Miles		*Miles*
1st class, asphalted	2,917	Surfaced	1,811
2nd class, macadamized	1,268	Unimproved	414
Tracks	5,218		

(Sources: *Statesman's Year-Book, 1953*; US Dept. of Commerce.)

There are over 11,000 vehicles registered in Syria. Trans-desert passenger and goods services to Iraq are in regular use and goods are also moved, including refrigerated vegetables, to Kuwait and Dahran. The authorities are restricting the registration of new lorries to the estimated needs of the countries, but more vehicles are required, particularly diesel lorries for long hauls of heavy loads.

Aerodromes. The new airport of Beirut (Khaldeh) receives the Comet, and is beginning to rival Cairo as a gateway to the East, and that of Damascus (Mezzeh) has long been in use by Constellations. Many international airlines stage at Khaldeh or Mezzeh; the approach to Khaldeh is better and, with between twenty and thirty aircraft a day, it has since 1951 outstripped Mezzeh, which has five to ten aircraft a day. For some years plans have been under consideration for moving the Damascus airport to the east of the city. There are two private Lebanese airlines. A national airline in Syria was a financial failure and was taken over by the army. Smaller airfields exist near Tripoli,

874 conducts an experimental farm, and cooperates with the government in a comprehensive educational program.

439 Syria produces a variety of items for export, the principal products being cereals, textiles, vegetables, cotton and wool and
135 hides. It is relatively poor in mineral resources, although rich deposits of asphalt exist in the Nusairiyeh range and salt basins in Aleppo, Homs and Damascus provinces.
471 Explorations for oil have been made in the northeast under a concession acquired in 1940 by the Syrian Petroleum Company, an affiliate of the Iraq Petroleum group.
315 After several years of unsuccessful borings,
651 the concession was relinquished, but the country derives some income from pipelines which traverse it, leading from the oil fields in Iraq and Saudi Arabia to Syrian and
433 Lebanese ports. Industrial development is slowly emerging from the handicraft stage, and numerous modern plants for the processing of local materials have been established, primarily in Damascus and Aleppo. They include the manufacture of textiles, soaps and oils, cigarettes, various food products, shoes, cement and other consumer goods. The promotion of industry is handicapped, however, by the shortage of raw materials, labor and cheap sources of power.

441 The cities and the towns of western Syria are linked with each other and with the adjoining territories by a system of motor roads. Communications in the interior are poor, and consist in many areas of tracks
505 across the desert. There are no navigable rivers. Latakia, the chief port, is small, and steamer traffic with the Mediterranean countries is at present conducted largely through Beirut and Tripoli, in Lebanon. The construction of modern port facilities at Latakia is scheduled, however, for 1953.
315 Banias has been developed as the terminal
505 of the new pipeline from the Kirkuk oil fields of the Iraq Petroleum Company to the Mediterranean. It was completed in
496 1952. Aleppo is connected by railways with both Beirut and Tripoli, and is an important junction on the trunk line from Istan-